interface...

The new inventory system in logistics has a 'just in case,' not a 'just in time' approach. Basing their supply on past trends of part usage, their goal is to always have sufficient parts on hand. Above: Tony Larson, traffic.

Logistics: a system for supply and demand

Imagine taking a trip to the market only to learn that the store has run out of food. Or imagine going to the department store to buy shoes and discovering that there is only one pair left — and it's the wrong size. If these were real-life situations, these stores soon would be out of business.

Without adequate inventory, a business can't operate. This is why the logistics team in Chippewa Falls is improving Cray's inventory system. With the implementation of a new logistics software package developed by the information systems department in Chippewa Falls for the Honeywell system, the logistics department is developing an inventory control network for the field.

The new logistics system on the Honeywell replaces a much simpler system developed for the Quantel in 1983. "We moved to the Honeywell system over a year ago," recalls Rod Thompson, logistics supervisor, "but we ran the two systems in parallel for about six months until we were confident of the validity of our transactions. In January, we accepted the Honeywell system and stopped using the Quantel."

Essentially, the Honeywell system moves the task of inventory management to Chippewa Fall's logistics team. Doing this, however, does not eliminate the responsibility of the site people. "If transactions aren't done appropriately at the site level, and the quantity on hand is not reflected accurately on the Honeywell system, the logistics team can't be very helpful," explains Arnie DeWitt, manager of information systems in Chippewa Falls. "It's the site's job to report what they actually have in stock, and it's logistics job to keep an adequate number of parts in the inventory crib. The field does the housekeeping; logistics does the planning."

Setting up the system

Logistics set up the Honeywell system by entering the current inventory status of all parts carried in the logistics crib. Site addresses* and other miscellaneous data also were entered. Every site also enters their current inventory status. This data base is updated on an ongoing basis, making inventory management much easier for everyone. Field personnel can see exactly what they have in stock, and logistics can use the data to analyze usage and develop projections. With this information, the logistics team can institute a safety stock-reorder point that helps eliminate the chance of a site running out of a particular inventory item. "Logistics' goal," explains Assistant Analyst Leslie Trecartin, "is to have a sufficient supply of parts on hand based on past trends of part

The implementation of a new software package on the Honeywell system has helped logistics institute a safety stock-reorder point that reduces the chance of a site running out of a particular inventory item. Above: Bill Hertzfeldt and Tony Larson, traffic.

usage. The system has more of a 'just in case' rather than a 'just in time' approach."

Working with the system

Each site has one or more unique passwords that permit the users to log-on to the Honeywell system using a personal computer and a modem. When logged on the system, sites can order parts, send mail messages to other users, update inventory files, and do inquiries — such as a part-usage history and part-location searches. Tasks previously done manually, such as the preparation of shipping documents, are now done by the Honeywell system.

Overall inventory control

Another advantage to the new system is that it allows field engineers to see what is available at other sites. For example, if an engineer needs a new module board, the first step is to check the site's supply. If the part isn't available, the engineer can check the Honeywell system to find out if other sites or locations have the part and in what quantity. The advantage is that site people can see not only what they have in their own inventory, but also where that part can be located conveniently.

Although the Honeywell system is still very new, the field response

seems positive. Soon the overseas locations will join the Honeywell system, and the inventory network will be complete. "I really appreciate the Honeywell system because it lets the field people take care of their own housework," comments Roger Brown, district field engineering manager for the Great Lakes and Northeast Districts. "Overall, things happen much faster and much more efficiently — in the field and in Chippewa Falls." ●

*In the case of inventory control, one site address is defined as a serial number for a Cray computer system. For example, Los Alamos National Laboratory has eight systems (eight serial numbers), and therefore, eight site addresses.

This program is sponsored by . . .

Corporate giving at Cray Research is more than signing a check. It's scholarships, grants for education, and matching gifts that benefit local communities. It's a reflection of the Cray Style which says, "The effort to create quality extends to the communities in which we work and live as well."

Bill Linder-Scholer, assistant to the chairman, describes Cray's commitment to corporate giving as a threefold effort. The first part is the Cray scholarship program. This was developed to encourage children of Cray Research employees to seek out higher educational opportunities. The second part is the grants to educational programs and organizations, and the third part is the matching gifts program, which emphasizes employee volunteerism.

Since the Cray scholarship program began in 1980, 254 scholarships have been awarded. Although the scholarship money comes from the Cray Foundation, the competition is administered by the Citizen's Scholarship Foundation of America to insure fairness. Children of Cray Research employees are eligible for scholarships based on academic achievement, extracurricular activities, work experience, and other accomplishments. The renewable scholarships cover 75 percent of the student's educational costs for one year at the institution of the recipient's choice.

The Grants to Education program provides direct grants to not-for-profit educational organizations, particularly those with a science or engineering emphasis. Guidelines are set by the Board of Directors for the Cray Foundation, and the Grants to Education Committee, which is made up of Cray Research employees, decides which organizations will receive grants. In 1986,

CCC recently held a volunteer fair to coordinate interested employees with volunteer opportunities in the community.

the committee awarded $759,100 in grants to educational organizations.

The third part of Cray's corporate giving, the matching gifts program, also consists of three components: One-for-one, Two-for-one, and the Annual Grant for Volunteerism. Through this program, Cray matches individual employee contributions up to $3000 and will double the match if volunteer time also is contributed. If volunteer time reaches or exceeds 25 hours in a year, Cray will make an additional grant of $500 to that organization in recognition of the contributed volunteer time. In 1986, the Cray Research Foundation gave $324,457 in matching gifts and volunteer grants.

"Our Annual Grant for Volunteerism program allows Cray employees to make a substantial monetary contribution to an organization in which they have a special interest," explains Joanne Whiterabbit, community affairs coordinator. "This distributes

money where Cray employees would like it, rewards their volunteer time, and creates very good feelings with the communities in which we live and work."

To encourage volunteerism and charitable activities, two groups were formed: the Employee Volunteerism Council (EVC) and the Charitable Contributions Committee (CCC).

Charitable Contributions Committee

"Working together to make a better community."

Recently, CCC held a logo contest. The winner, Carolene Kudingo from product support, received a $100 grant to donate to the Chippewa County Humane Society.

EVC is a recently formed council that includes employees from Minneapolis and Mendota Heights. Since its formation in January, the council has organized a food drive and is working on developing a group volunteer project to be held this summer.

The other subgroup, CCC, was established in Chippewa Falls in 1985. This group meets once a month to discuss various volunteer projects. The committee serves as a link between Chippewa Falls employees and the community by communicating volunteer opportunities to the employees.

Over the past two years, CCC has coordinated blood and food drives and has participated indirectly in an adopt-a-family program. Recently the committee coordinated a volunteer fair aimed at matching employees with organizations where there might be volunteer interest.

"From the perspective of the individual employee, the matching gifts and Annual Grants for Volunteerism programs are the base of the company's contributions plan," explains Joanne Whiterabbit. "They promote the company's philosophy that the individual is key."

Cray employee Paul Ernst spent 3½ weeks in Tanzania working on a project for Global Volunteers. Paul assisted in a planning mission to determine the needs of the native tribes. Through the Annual Grants for Volunteerism, Cray Research donated $500 to the Global Volunteers on Paul's behalf.

Cray Research has a unique attitude toward community involvement: the choice and the responsibility belong to the individuals who work here. Through corporate sponsorship, Cray provides community service opportunities for people to participate in their best interest and beliefs. Cray provides the alternatives, but it is up to the individual to take advantage of the available programs. In doing so, employees can strengthen the bond between Cray Research and the communities it serves. ●

EMPLOYEE VOLUNTEERISM COUNCIL

Mendota Heights:
Marc Baber—Software/Tech. Ops.
Kevin Bluml—Software Dev.
Sheryll Dieter—Marketing/MH
Fritz Ehlers—Marketing/MH
Paul Ernst—Software Dev.
Doug Henry—Software Training

Minneapolis:
Merrily Blagen—Northstar West
Pat Schmidt—Northstar East
Paul Schoenholz—Northstar West

CHARITABLE CONTRIBUTIONS COMMITTEE

Chippewa Falls:
Dianne Roth (chair)—Printed Circuit
Kelli Anders—Riverside Development
Jerilyn Anderson—Riverside Project
Don Hable—Development
Mary Hatleberg—Systems
Tim Hebert—Printed Circuit
Rick Magyar—Technical Operations
Terry McDougall—Harry Runkel
Loni Meinen—Product Support

Dale Schimmel—Product Support
Marilyn Staatz—Site Engineering
Barb Walters—Manufacturing
Donna Whiting—Riverside Project
Lesa Anderson—Development
Dawn Hamilton—Engineering
Kathy Olson—Manufacturing

Keeping up with current events
an interview with John Rollwagen

This year the United States is expected to have a trade deficit with Japan of over $50 billion. Although the deficit has grown for the past 20 years, the bulk of the problem has arisen within the past five years due to increased borrowing and spending habits in the U.S. as well as aggressive marketing efforts on the part of Japanese manufacturers.

It seems, however, that the trade deficit and the practices that creat-

ed it are approaching their fiscal limits. Economic principle dictates that the current deficit has to be reversed. The U.S. must pay back the money it has borrowed to buy Japanese goods. To do this, the U.S. has to sell more goods to Japan and the rest of the world than it is buying.

All this leads up to the current point of controversy that resulted in the April 17 trade sanctions placed on Japan. The U.S. Government and various industry groups claim that Japan is unfair in its trade practices in a number of areas, ranging from semiconductors to construction contracts. Basically, the U.S. feels that Japanese businesses not only are dumping on the world market, but also that many Japanese markets are closed to U.S. companies.

This deteriorating trade relationship between the U.S. and Japan has been the source of a great deal of recent publicity. Because super-

computers are a specific topic of discussion between the two countries, Cray Research plays a special and visible role in these events. To help you understand Cray's position, *Interface* met with John Rollwagen to discuss his thoughts on the U.S.-Japan trade situation.

I: What is Cray's involvement in the U.S.-Japan trade discussions?

J: We are involved to the extent that we keep the government advised of our business — especially that involving Japanese companies — here, in Japan, and elsewhere in the world. By sharing our experiences, we hope to help the government fairly evaluate the trade situation. Pete Dillingham, Suzy Tichenor, and Bill Bartolone* do most of the legwork, and I'm involved to the extent that my work takes me to Washington D.C. too.

I: How is Cray Research working with the U.S. Government with respect to the current trade situation?

J: The current trade situation is far from black and white, so that in our discussions with the government, we have several points to make. First and foremost, Cray Research supports free trade and open world markets. At the same time, we understand that there are much larger forces in the world than those associated just with supercomputers. Therefore, we try to support the U.S. Government in its data-gathering efforts by supplying the Department of Commerce and the U.S. Trade Representative with whatever information is needed to make good decisions.

At the same time, we point out to the U.S. Government that restraining trade with Japan will shift the competition in supercomputers from the U.S. and Japan to everywhere else in the world. In other words, Cray Research will be competing with Japanese suppliers everywhere but in the U.S. and Japan. And if that's the case, to avoid forfeiting the world market to Japan, we will need greater assistance on the part of the U.S. Government in selling our systems.

What I'm leading up to is the matter of export licenses. We understand and agree that there has to be export regulation; but if we are to maintain some sort of parity with Japan, the process of issuing export licenses has to be streamlined. Furthermore, if Japan doesn't impose similar export restrictions on their products, and administer those restrictions in the same way as the U.S., we'll lose market share in other countries. And that's not just an economic loss — that's also a technical loss, because one of our biggest strengths is our 100 plus customers telling us every day how to make our machines better. To give up even part of that resource would be a setback for Cray Research.

I: What is your opinion about the recent trade sanctions placed on Japan?

J: It appears that some Japanese semiconductor companies have indeed engaged in dumping their products on the U.S. market. In response, the U.S. Government felt it had to take this measure, and I have to assume the sanctions were necessary. At the same time, I think that the trade

sanctions are very unfortunate because for a company like Cray Research, any effort to close the borders is bad. We buy parts from Japan, and we sell computers to Japan — not as many as we would like, but enough to make it interesting. And closing the borders does not work to our benefit.

I: Do you feel that Cray supercomputers are being used as a bargaining tool in trade negotiations?

J: There is a possibility that we may sell a machine or two as a result of the current trade friction. Our systems are big, highly visible, and expensive. And they seem to have more impact on the psychology of the situation than the numbers alone would warrant.

Actually, if Cray Research does sell one or two extra systems as a result of the current trade discussions, it will be a good deal for both sides. The Japanese customers will win, and we will win. It's not as though they would be buying token computers to put in a closet.

In fact, I want to emphasize the importance of the business we have already done in Japan. We have a number of strong, creative customers who are using our equipment to the limit and showing us how to do even better. Nippon Telephone and Telegraph (NTT) has used its Cray system to break new ground in circuit density. Also, recent issues of *CRAY CHAN-NELS* have illustrated how Nissan and Toshiba are playing leadership roles in applying Cray technology in their respective industries. We need the help and guidance of these and our other customers to maintain our own leadership role.

I: Do you think that the purchase of Cray supercomputers can

overcome the trade imbalance between the U.S. and Japan?

J: I did the arithmetic recently and figured out that Japan would have to purchase about 3,000 Cray systems a year to really impact the current trade deficit. Obviously, we'd like to help as much as possible; but I don't think we can count on reaching that volume of business with Japan.

I: Is there any concern that semiconductors will not be available to us in the future for the manufacture of our systems?

J: It's pretty hard for me to imagine a closed market where we can't buy parts from Japan. If it did happen in the short run, however, we could make our machines from all-U.S. parts. A key factor in this, however, is Fairchild Semiconductor Corporation. Basically, I'm pleased that Fairchild apparently will be able to maintain its independence and still have joint technology projects with Fujistu. If Fairchild had been sold to Fujitsu, Fujitsu would have continued to be a good supplier; but the fact is that we would have had a net reduction in our number of suppliers; and that is not what we want.

I: What do you see as the ideal outcome of the current trade situation with Japan?

J: The ideal outcome would be that both sides would back off and allow free market access. I believe that we need each other to survive; and frankly, competition means more business for everyone.

When we set up our Japanese subsidiary, we sold two systems in our first four years of business. Ironically, it wasn't until

Fujitsu and Hitachi entered the market that the Japanese supercomputer market began to expand. We're not in a zero-sum game. We can create business by having more alternatives, more competitors, more activity.

It's even analagous to what's going on inside Cray Research. We have Seymour Cray, Steve Chen, Les Davis, and Jerry Brost all working on projects that are, theoretically, competitive. There are two ways that they can compete with each other: they can compete to be better than the other guy, or they can compete to hurt the other guy so there won't be any competition. But if

we are just trying to beat the other guy in a positive sense — if Steve Chen is just trying to make a better machine than Seymour Cray — then there's room for all of us.

While it may appear tempting in some ways to say: "Look we'll show them, we'll close our markets," that's not the answer. In the supercomputer business, or in any business for that matter, we're now operating in a world market. If the market becomes limited, we'll lose in the long run. It definitely serves our interest to be on the side of free trade. The best outcome is that both sides survive and prosper. ●

In March, David Dyson, a partner with the law firm of Doherty, Rumble & Butler, joined Cray Research as Corporate Counsel. David's arrival completes the formation of the Legal Group, which handles the wide base of legal affairs at Cray Research.

Corporate Counsel is a newly created position at the officer level, with broad responsibility for business legal matters. David's assignments include those not already assumed by David Frasch, Technology Counsel, and Mark McNeil, International Counsel.

All members of this team work closely with Vice Chairman Andrew Scott, who continues to provide input on policy and strategic matters. Each member also has reporting responsibility to one of Cray's Executive Vice Presidents; David Dyson to John Carlson, David Frasch to Les Davis, and Mark McNeil to Marcelo Gumucio.

"Cray's legal group structure is intended to continue the company's approach to legal matters," says Andrew Scott, "that lawyers are available but not invasive, and that decisions should be made by those who are responsible for the results."

Cray Research requires top-level legal capability to respond to the company's increased depth and complexity. Members of the Legal Group coordinate advice from outside counsel and focus on legal aspects of Cray operations both domestically and internationally.

Completing our legal group: Dyson joins as Corporate Counsel

David Frasch
Technology Counsel

David Dyson
Corporate Counsel

Mark McNeil
International Counsel

This support avoids a hierarchial structure and provides lead counsel for major company functions.

Sharing Cray values

As with David Frasch and Mark McNeil, David Dyson's professional qualifications and objectives are closely aligned with the challenges and attitudes at Cray Research.

During his eight and a half years with Doherty, Rumble & Butler, David concentrated on financial and business activities. "I was doing a lot of venture capital with small companies," he says. "The position as Cray's Corporate Counsel allows me to expand my knowledge and broaden my activities."

The opportunity to expand his activities, along with the excitement and reputation of Cray Research, attracted David to the new position. "Cray Research is at the cutting edge of technology, and running on the edge of technology means running on the edge of legal issues. Technology forces change in society, which forces change in law," he remarks. "I feel fortunate to be a part of the leading edge in both respects."

As David notes, law has exploded in recent years as society has become increasingly complex. Whether it's debenture offerings, director liability, or stockholder activities, the challenge is to be aware of how a corporation, person, or client is affected by today's legal environment and to address issues without compromising business objectives.

In this respect, David believes prevention is the only reasonable route for a corporation. ''There is no real victory in court,'' he insists, ''not when you assess emotional cost, cost to business, and the drain on time and energy. Legal activities can't be the tail wagging the dog.''

But corporate law is not David's only source of challenge. He is active in the Lexington Hamline Community Council, and he has been deeply involved in the formation and management of a housing cooperative for low income families in his St. Paul neighborhood. Another challenge is getting a good crop of honey and wax from the beehives he keeps. ''Bees are interesting and fun to observe and learn about,'' he remarks. ''It's not that easy to get a good honey crop — I've been stung many times.''

If David runs out of things to say about bees, he can tell some good stories about trekking in Nepal, riding local buses in Afghanistan, or fording the Niger River in a jalopy. While attending the University of Singapore his junior year in college, David travelled throughout Southeast Asia and overland from India to Turkey. After college he returned to Thailand to teach English for three years, and after graduating from law school, he spent his honeymoon in Mali, West Africa. ''One of these days I'll have to visit Europe,'' he says.

It's easy to see that travel is in David's blood. At the turn of the century, his grandmother went to Tibet after finishing college. It was there that she met his grandfather. They were married and went to live in India. David's parents continued this travel adventure as medical missionaries in Lebanon and Iran, which is where David spent his early years.

''Living abroad has been important to me,'' David says. ''I've come to appreciate the many differences among cultures, and also the many commonalities.''

David and his wife Susanne Hollingsworth have two children: Katherine (Kate) is almost seven years old, and Mark is 20 months. ●
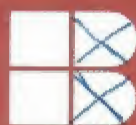
BenefitsPlus

The April BenefitsPlus column explained how Cray's Stock Purchase Investment Plan (SPIP) works. Now we are providing a calendar of events to keep you informed of the timing for various mailings concerning the plan. Also, as a reminder for employees who plan to purchase stock as of May 31, 1987, the Offering Price on June 1, 1986 was $92.50. You will pay the *lower* of 85 percent of the Offering Price ($92.50 x 85 percent — $78.625) or 85 percent of the market price at the end of the plan year (May 31, 1987).

SPIP Calendar of Events

April 27 - May 8, 1987

- Enrollment period for the June 1, 1987—May 31, 1988 plan year.
- Purchase period for purchase of stock or withdrawal of funds for the June 1, 1986—May 31, 1987 plan year.

May 8, 1987

- Deadline for returning the enrollment form indicating your desire to enroll or decline participation in the 1987-88 plan year.*
- Deadline for return of the stock purchase registration or withdrawal form indicating your desire to purchase stock or withdraw funds from the 1986-87 plan year. Purchase of stock, registered in the employee's name only, is automatic if you don't reply.*

June 30, 1987

- Target date for mailing individual account statements and cash balance or total withdrawal checks from June 1986—May 1987 plan year (issued by Norwest Bank, NA, Minneapolis).
- Target date for mailing June 1 enrollment confirmation notices (issued by your local benefits administrator).
- Target date for mailing stock certificates (May 31 purchase date) from June 1, 1986—May 31, 1987 plan year (issued by First Trust Co. of St. Paul).

January 31, 1988

- Issue date for 1099 interest statements (if interest is more than $10.00).

*Due to plan provisions, no enrollment (except new hires) or purchase/withdrawal decisions will be allowed after May 8.

Note: The information in this BenefitsPlus column applies only to U.S. employees. International employees should contact the following people with any questions: *Alan Benfell* — Abu Dhabi, Australia, Hong Kong, Netherlands, Norway, Saudi Arabia, Sweden, United Kingdom
Kenji Fukugama — Japan
Silvia Holzmann — Germany
Katherine Mather — Canada
Gilles Michel — France, Italy, Switzerland

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News Briefs

Lockheed installs CRAY X-MP system

On April 9, 1987, Cray Research announced that Lockheed Missiles & Space Company installed a CRAY X-MP/24 computer system valued at $8.5 million in the first quarter of 1987. The purchased system replaces a CRAY-1 S/1000 computer system in operation since 1983. The new system will be used for the design and analysis of missiles and spacecraft.

British Petroleum orders system

Cray Research announced on April 9 that British Petroleum has ordered a CRAY X-MP/24 supercomputer valued at approximately $6.6 million. The leased system will be installed at the London headquarters of BP Exploration Co. Ltd. in the fourth quarter of 1987, pending export license approval.

The CRAY X-MP/24 computer system will replace a CRAY X-MP/12 supercomputer in operation since 1985. The system will be used mainly to support the oil production activities of BP Exploration including research in both reservoir simulation and seismic processing.

Sandia installs system

On April 21, Cray Research announced that Sandia National Laboratories in Albuquerque, New Mexico, installed a CRAY X-MP/416 supercomputer with SSD solid-state storage device. The purchased system, which is valued at approximately $22 million, was installed in the first quarter of this year.

Sandia National Laboratories is a multi-program research and development organization that operates under a no-fee, no-profit contract for the U.S. Department of Energy.

LLNL orders system

Cray Research announced on April 29 that the Lawrence Livermore National Laboratory (LLNL) has ordered a CRAY X-MP/416 computer system and SSD solid-state storage device valued at approximately $22 million. The purchased system will be installed at the Livermore Computing Center in Livermore, Calif., in the second quarter of 1987.

The Laboratory is operated for the U.S. Department of Energy by the University of California. This will be LLNL's tenth Cray supercomputer.

Electricite de France orders Cray system

On April 29, Cray Research announced that Electricite de France (EDF) has ordered a CRAY X-MP/24 computer system valued at approximately $9 million. The system, which will be leased, is scheduled for installation in the fourth quarter of 1987, pending export license approval.

EDF is the French national utilities company in charge of nuclear plant design and construction as well as electricity production and distribution.

The CRAY X-MP/24 computer system will be installed at EDF's research facility in Clamart, France. EDF will continue to operate a CRAY X-MP/216 computer system previously installed at its Clamart facility.

0 to 500 in fifteen years

In the April 27, 1987 issue of FORTUNE magazine, Cray Research was officially named to the *Fortune* 500. Ranked by sales, Cray jumps to number 421 on the renowned listing of the largest United States industrial companies. What is so phenomenal, however, are some of Cray's other rankings reported in this list.

In terms of net income as a percentage of stockholders' equity, Cray Research comes in at 23 of those top 500 companies. As a percentage of assets, Cray is 6th. And looking at net income as a percentage of sales, Cray Research is number 1.

And it doesn't stop there. On the *Forbes* 500 listing, which ranks all publicly-held companies, not just industrial corporations, Cray is number 288 on the Profit 500 list. In terms of market value, Cray is ranked at 211. Of all computer companies, Cray is second to Apple in terms of sales per employee, and is once again first in terms of profits per employee.

Finally, on *Business Week's* listing of the top 1000 American companies, Cray came in at number 152. We're 699th in sales, 281st in profits, and 727th in assets. And in industry ranking, Cray Research was number nine.

Not bad for fifteen years.

First quarter financial results

On April 23, Cray Research reported revenue of $214,147,000 and net earnings of $57,230,000, equal to $1.79 per share, for the first quarter ended March 31. This compares with revenue of $142,021,000 and net earnings of $30,882,000, or $1.00 per share, in the first quarter of 1986.

During the first quarter, the company installed sixteen new computer systems, of which thirteen were purchased and three were leased. The company also reinstalled three used systems, one of them purchased and the others leased. Eight orders were signed during the quarter.

John Rollwagen said that revenue and earnings results for the quarter "were excellent and were influenced significantly by the number of systems installed and the high proportion of purchased versus leased systems." He also said the company's first quarter should be the strongest of the year.

Cray Research, Inc. and Subsidiaries
Consolidated Summary of Earnings
(Unaudited)

(In thousands, except per-share data)	Three months ended March 31	
	1987	1986
Revenue	$ 214,147	$ 142,021
Operating costs and expenses	122,821	87,008
Operating income	91,326	55,013
Other income	2,818	1,976
Earnings before income taxes	94,144	56,989
Provision for income taxes	(36,914)	26,107)
Net earnings	$ 57,230	$ 30,882
Earnings per common and common equivalent share	$ 1.79	$ 1.00
Average number of common and common equivalent shares outstanding	32,451	31,315

To be art it must elicit strong feelings

If this saying is true, the Lee Friedlander book, *Cray at Chippewa Falls*, has earned its place in the world of art history.

"A stunning work — one of the finest collections of Lee's photography yet published," — museum curator.

"The book shows the energy and concentration I see each time I visit Chippewa Falls," — Cray employee.

"It's an unfair representation of Chippewa Falls and Cray Research," — Cray employee.

"It makes Chippewa Falls look like a dump! The book doesn't convey what Chippewa Falls is all about," — Cray employee.

"My first reaction was that of nostalgia and serenity. Then I noticed the composition of the photos; it gave me a good feeling for Chippewa Falls," — Cray employee.

Yes, the book did elicit a mixture of strong feelings. Photographer Stuart Klipper, who wrote the book's closing commentary, reinforces this idea when he explains that artists act according to their own nature, and that people respond to art in an equally unique manner. While some reviewers of the book comment on the ambition, intensity, and dedication reflected in each print, others note the depth of field, the detail, and the compositional components. As John Rollwagen notes, "There is no right or wrong response, no informed or uninformed reaction. The book is a personal vision of Cray Research and Chippewa Falls."

In his commentary, Mr. Klipper also sheds some light on the char-acter of the photographs and the vision and style of Lee Friedlander. "The photographs in this book, especially those of people at work, are as much about grace as they are about what it looks like where Crays are made," he says.

As a recipient of several fellowships and awards, Lee Friedlander has published seven portfolios and seven books of photographs. His eighth book, *Cray at Chippewa Falls*, was commissioned by Cray Research and presented to employees and museums around the world. An exhibit of the photos is planned for the Minneapolis Institute of Arts in the Fall of 1987.

As writer Isaac Bashevis Singer notes: "The greatness of art is not to find what is common, but what is unique." In this eighth book, Lee Friedlander captures the unusual, the provocative, and the unique aspects of an intriguing environment.

Strrrrrrretchbreaks!

"Everybody enjoys stretchbreaks," comments Cindy Frisle, cable assembly. "The exercises are fun, good for you — and they wake you up and get you going!"

Good pianists don't just sit down and play Beethoven's Moonlight Sonata. First, they practice finger exercises and scales that warm their hand muscles, increase their endurance, and enhance their concentration.

Likewise, to give their best performance, people in Cray's manufacturing groups keep themselves mentally and physically healthy by practicing daily muscle stretches. They are lessening the risk of musculoskeletal problems by providing "stretchbreaks," a program designed to cut down on injuries related to manufacturing.

Human Resources Administrator Barb Powers says that people participate in two five-minute stretch sessions a day. Currently stretchbreaks are conducted in wiring, cables, modules, and inventory. Within the next month, they will begin at receiving and inspection.

"Before we started stretchbreaks, some people were experiencing muscular discomfort. We had an orthopedic surgeon come in and evaluate the work environment, and he felt that it would be helpful for the employees to participate in some sort of exercise break," Barb explains.

Barb works with Penny Skerhutt, an outside aerobics instructor who has experience conducting exercises for an electrical company nearby. Together they are developing exercises that will help prevent muscle problems associated with the intricate work.

To initiate the program, Penny and Barb took small groups of employees and showed them the correct way to do the exercises and avoid injury. They also conducted flexibility tests on employees, which they hope to continue three times a year to evaluate the success of the program.

"The program is pretty new," says Barb. "But overall, the reaction has been positive. In a few months, we should have a concrete measure of success."

Linda Berg and Lorena Walczak, wiring, help conduct the stretchbreaks in their department. "I think the stretchbreaks program really has the potential to work," says Linda. "People are learning to do the exercises correctly and, as a result, they're starting to feel the benefits. In the long run — it will really be a plus." ●